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ABSTRACT

This monograph is one in a series of semiannual reports that focus on research related to reading in secondary schools. The four reports collected in this monograph examine the following topics: (1) attitudes of preservice secondary school teachers toward reading in the content areas; (2) the effects of a content area reading institute upon teacher planning; (3) a review of the research on the uninterrupted sustained silent reading strategy; and (4) good, average, and poor secondary level readers' affective responses to negatively connotative and positively connotative substitutes for "said." (RL)

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RESEARCH ON READING IN SECONDARY SCHOOLS

A Semi-Annual Report

Monograph Number 5

Edited by

Joseph L. Vaughan, Jr.
Patricia L. Anders

Spring, 1980

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A special thanks is due to William J. Valmont, Head of the Reading Department, for his support in producing this monograph. Further, we would like to thank Laurie Deurloo, for her assistance in preparing this issue.

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PURCHASE OF MONOGRAPH

This monograph is the fifth in a series of semi-annual reports of research related to reading in secondary schools. This monograph has been funded by the Reading Department of the University of Arizona for the primary purpose of disseminating research findings to professionals in reading who are interested in improving the reading ability of adolescents.

The first two issues of this monograph are available through ERIC; number 1, ED 177 509, and number 2, ED 177 510. Issues 3, 4, and 5 are available through the Department of Reading at a cost of $3.50 per monograph. Checks should be made payable to the Reading Research Monograph and forwarded to the University of Arizona, Tucson, Arizona, 85721.

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SUBMISSION OF MANUSCRIPTS

This monograph series is planned and published as a non-profit enterprise by faculty and doctoral students in the Reading Department at the University of Arizona. Each article submitted is independently reviewed by at least three members of the editorial board. Subsequent issues are planned that will include specific research studies, theoretical papers that emphasize a need for research, and additional reviews of literature. Articles that deal with any of these areas are being actively solicited if they (1) are of interest to reading professionals on the secondary level, (2) are primarily directed to research, and (3) have not previously been published elsewhere.

One unique aspect of this series is that the editorial board is particularly interested in receiving papers from doctoral students and from assistant professors. It is our belief that many of the professionals in these categories do not publish their research findings because of a perceived and existing difficulty "breaking into the publishing game." We hope to encourage "first-time" authors by providing such an opportunity and encourage such prospective authors to submit papers or questions to the editors.

The response to our effort has been most gratifying. As you may well appreciate, the production and dissemination of a new publication is hardly an easy task. In fact, as we succeed, the task becomes increasingly more complex. Our future success depends upon the degree to which our colleagues join us in generating research and in reporting their findings.

J.L.V.
P.L.A.

Attitudes of Pre-Service Secondary Teachers Toward Reading in the Content Areas

Janet Steig
Kean College of New Jersey

Several states now require reading courses for secondary certification. However, whether the techniques taught in reading education classes will be implemented in future secondary classrooms certainly depends, in part, on the attitudes of prospective teachers. Therefore it is important to know whether secondary reading courses are creating positive attitudes toward content area reading.

This study had two main purposes. The first was to extend the use of an attitude survey on content area reading which had been developed by Joseph Vaughan (VAS) to the undergraduate level. Vaughan had gathered reliability and validity data on groups of graduate students, (1977a; 1977b) but the scale had not been used at the undergraduate level. The second purpose was to measure attitude changes which occurred during a course in secondary reading at Kean College of New Jersey.

Use of VAS with Undergraduate Groups

The 15 question attitude survey was administered to students in five sections of a secondary reading course on the first day of class. The scale was administered again on the last day of class. Social security numbers rather than names were used to

provide anonymity and encourage honesty in answering the questions. In addition to answering the questions, students were asked to supply information on age, sex, major field and reading courses previously completed. Only the surveys of those students who indicated that this was their first reading course and who planned to teach in a secondary content area (as opposed to elementary education and special education majors) were used for this study. The total number of students who met these requirements and completed both the pre and post tests was 55.

Vaughan's survey (figure 1) is scored on a 7 point Likert Scale with responses ranging from strongly disagree (1) to strongly agree (7) with a neutral response in the middle (4). Nine of the items are positive in nature and six numbers (3, 5, 7, 9, 11, 14) are negative. Negative items are flipped for scoring. Total scores on the scale can range from 15 to 105. Vaughan has identified the following criteria for scoring:

Range	Attitude
91 or higher	High
81-90	Above average
71-80	Average
61-70	Below average
60 or lower	Low

In discussing his attempts to validate the VAS (1977a, 1977b) Vaughan indicates that he began with a pool of 30 items which he administered to teachers and graduate students. These groups indicated which items were redundant or ambiguous. Items were revised or eliminated until the 15 final items were selected.

Vaughan cites three validation studies conducted on his survey (1977b). The first was a comparison of the scores of teachers known to have positive attitudes towards reading with the scores of a group whose attitudes were unknown. The second and third studies were of the pre-post nature, using as subjects graduate students enrolled in a summer course in reading and as control groups graduate students enrolled in other courses.

The results of these studies, Vaughan feels, indicate that the scale measures a unique construct, discriminates between groups and is sensitive to treatment. Vaughan collected reliability data by computing Cronbach's Alpha, a measure of internal stability for each of the administrations of the survey during these three studies. The alpha coefficients ranged from .69 to .87.

As a replication of Vaughan's work using an undergraduate population, Cronbach's Alpha was computed for both the pre and post administrations of the survey in this study. The results appear in Table I and are consistent with Vaughan's findings.

Table I

Alpha Coefficient for Pre-and Post-tests

	N	Mean	S.D.	Coefficient
Pre-Test	55	73.18	9.80	.69
Post-Test	55	75.89	11.57	.84

Item-total test correlations were computed for each item and with the exception of item 4, all of these correlations were over .4, a finding also consistent with Vaughan's. The correlation for

item 4 was 1.3. Looking at the item - "Few students can learn all they need to know about reading during the first six years about school," it appears that the wording may be confusing. Perhaps if the item had read "Students cannot learn . . ." it would have been clearer. In conclusion, the survey appears to be reliable for use on an undergraduate level.

Attitude Changes

The second purpose of this study was to measure the attitude change which occurred during an undergraduate course in secondary reading and to relate the change, if any, to certain student characterisitcs. A one tailed pair t test (Table 2) indicated that there was a significant change in attitude which occurred during the course.

Table II

One Tailed t Test on Different Scores

N	Mean	S.D.	t Value
55	2.9	11.7	1.83*

The relationships of student characteristics - specifically sex, age, day vs. evening and grade obtained in the course - to the attitudes with which the students entered the course, the attitudes with which they left, and/or the change in attitudes were also investigated. The numbers for the identified groups are shown in Table III.

Table III

Ns for Contrasting Groups

Sex		Age		Day/Eve	Grade
Males	33	25 or younger -	37	Day - 34	C - 11
Females	22	26 or older -	18	Eve - 31	B - 19
					A - 25
Total	55		55	55	55

The F values for attitudes on the pre-test, attitudes on the post-test and attitude changes are shown in Table IV and the direction of the differences are shown in Table V.

Table IV

F Values for Relationship

of Attitudes to Student Characteristics

	Pre-Test	Post-Test	Change
Sex	5.18**	6.40**	.24
Age	.43	8.15*	1.25**
Day/Night	1.05	2.29	6.06**
Grade	4.10*	1.04**	1.71

* significant at .05

** significant at .01

Table V

Direction of Differences

Sex: Females Males

Age: 26 or older 25 or younger

Day/Eve: Evening Day

Grade: A B C*

* significant differences between C and others

There were 33 males and 22 females in the sample. Female students seemed more amenable to teaching reading in the content areas when they began the course and maintained this attitude. Change was the same for both sexes.

The dividing line for age was 25 since students over this age are usually considered "mature" students. There were 37 students who were 25 or under and 18 who were over 25. Pre-test attitudes did not differ for the age groups. However, older students appeared to change their attitudes more readily than younger ones and by the end of the course their attitudes were significantly more favorable. To some extent the day/evening division overlaps the age division - i.e. more older students tend to go to school at night. However, the overlap is by no means complete since there are usually several older students in day classes and certainly many younger ones in evening classes. There were no significant differences between day and evening groups at the beginning or at the end of the course although students in the evening classes did appear to change their attitudes more than those in day classes.

Of the students in the sample, 11 received C's, 19 B's, and 25 A's. Students who came into the course with more favorable attitudes apparently got better grades and maintained better attitudes. The real break here comes between the B and C students. There was no significant difference between the A and B students. This is a kind of chicken-egg situation since it's hard to know

whether these students got good grades partially because their attitudes were favorable or whether their good grades reinforced their favorable attitudes - quite possibly some of both.

Conclusion

In summary, this study appears to support Vaughan's contention that affective factors related to teaching and learning can be measured. Secondary reading courses can be instrumental in creating positive changes in attitude toward teaching reading in the content areas. Females appear to have more favorable attitudes toward reading instruction than males; older students seem to change their attitudes about reading instruction more readily than younger students and students' attitudes are related to the grades they eventually obtain in the course. Vaughan's scale appears to be an effective measure of these attitudes in an undergraduate population.

References

Vaughan, Joseph L. Jr. "A Scale to Measure Attitudes toward Teaching Reading in Content Classrooms." Journal of Reading, Vol. 20, no. 7, (1977), pp. 605-609.

Vaughan, Joseph L. Jr. and Darrell Sabers. "Factors in Validating Affective Scales: an Applied Study." Journal of Reading Behavior, Vol. 9, no. 4, (1977), pp. 253-259.

Figure 1

A Scale to Measure Attitudes Toward

Teaching Reading in Content Classrooms

Directions: On the separate answer sheet, indicate your feeling toward each of the following items:

1. A content area teacher is obliged to help students improve their reading ability.

2. Technical vocabulary should be introduced to students in content classes before they meet those terms in a reading passage.

3. The primary responsbility of a content teacher should be to impart subject matter knowledge.

4. Few students can learn all they need to know about how to read in six years of schooling.

5. The sole responsibility for teaching students how to study should lie with reading teachers.

6. Knowing how to teach reading in content areas should be required for secondary teaching certification.

7. Only English teachers should be responsible for teaching reading in secondary schools.

8. A teacher who wants to improve students' interest in reading should show them that he or she likes to read.

9. Content teachers should teach content and leave reading instruction to reading teachers.

10. A content area teacher should be responsible for helping students think on an interpretive level as well as a literal level when they read.

11. Content area teachers should feel a greater responsibility to the content they teach than to any reading instruction they may be able to provide.

12. Content area teachers should help students learn to set purposes for reading.

13. Every content area teacher should teach students how to read material in his or her content specialty.

14. Reading instruction in secondary schools is a waste of time.

15. Content area teachers should be familiar with theoretical concepts of the reading process.

From: Journal of Reading, Vol. 20, no. 7, April, 1977.

The Effects of a Content-Area Reading Institute Upon Teacher Planning

Judythe P. Patberg, Peter Dewitz, Mary Jo Henning
University of Toledo

Over the past decade secondary teachers in the various content areas have been asked to assume responsibility for developing their students' reading ability. Numerous books have been written on the subject (Burmeister, 1978; Herber, 1978; Thomas & Robinson, 1977); many states now require a reading course for all secondary teachers; and innumerable inservice programs are being established for the purpose of helping secondary teachers assume that responsibility.

The literature is replete with articles and recipes on how to teach reading in the various content areas, but, little, if any, research has been done to suggest what specific reading instruction teachers will use in their classrooms or to indicate what kind of transfer is made from inservice instruction to classroom instruction. In other words, do we know that what the reading experts are championing in their textbooks and the college reading teachers are teaching is being implemented to some degree in secondary classrooms?

The authors of this study had the opportunity to develop and teach a state funded teacher institute on integrating the teaching of reading with the teaching of content in the junior and senior high school curriculum. Since little research has been conducted

in content area reading instruction, the authors used the inservice institute to do initial research in this area. The research reported in the paper will describe the effect of the institute on teachers' attitudes toward teaching reading in content areas and on teachers' ability to integrate content area reading strategies in their instructional plans. Positive attitudes toward teaching reading in content areas and plans for implementing these reading strategies can be viewed as important precursors to the successful teaching of reading in content areas (Shavelson, 1976). The present study will evaluate teacher attitudes and teacher planning. A subsequent study will, through classroom observation, evaluate the actual implementation of content area reading instruction.

Overview and Description of Institute

In June 1979, a two-week institute was conducted by two instructors from the University of Toledo with 33 junior and senior high teachers -- 13 English, 6 math, 4 science, and 10 teachers from other areas such as home economics, physical education, art, and social studies -- from Lorain, Ohio. The primary goal of the institute was to involve these teachers in the development of their students' reading abilities.

During the ten days of institute instruction the following objectives were met by participants:

1. The readability level of textbooks and other classroom reading materials was determined using the Fry Readability Formula and an evaluation checklist.

2. The textbook and other related materials were used to

a. assess student reading ability by developing at least one informal reading text consisting of three parts with questions dealing with: using parts of the textbook; vocabulary; and reading skills subsumed under the literal, interpretive, and applied levels of comprehension.

b. assess student reading comprehension by developing, administering, and interpreting the Cloze Procedure. (Administration and interpretation will be done during the follow-up.

c. assess student interests by developing a student interest inventory in which students respond to items focusing on such areas as reading preferences, movie/television preferences, and hobbies.

3. At least three prereading motivational activities for a given day's reading instruction were developed. (Content area specialists determined the interest level of each activity.)

4. The textbook and other related content materials were used to develop strategies for teaching vocabulary using techniques suggested by Herber (1978) and other reading authorities (Thomas and Robinson, 1977). Participants submitted written papers in which they applied at least two vocabulary strategies to a particular unit of study on the following areas:

   a. use of context to infer meanings implied by the author

   b. use of structural analysis to unlock the meaning of a long and difficult-appearing word

   c. preteaching of special or technical vocabulary.

5. Activities were constructed that developed student reading comprehension.

   a. Each participant designed three types of reading guides that would be implemented in his/her classroom. The reading guides were designed to:

      1. lead a student through levels of comprehension from literal to interpretive to applied;

      2. focus on internal patterns of paragraphs such as comparison/contrast, cause/effect, and main idea/detail; and

3. lead a student through specific skills development such as conclusions, generalizations, and relationships.

6. Appropriate approaches were selected for individualizing reading instruction in a content area classroom. Participants read different articles on individualizing reading in secondary classrooms written by reading authorities and presented a written rationale for the individualized approach advocated in the article (e.g., grouping on the basis of differentiated reading assignments; individualizing instruction with reading guides).

7. A list of appropriate supplementary reading materials for a given instructional unit was designed. Materials were considered appropriate if analyzed for readability level, level of interest, and relationship to instructional unit.

8. A reading lesson was designed in which flexibility in reading was demonstrated with the students. The following steps were evidenced in the lesson:

   a. purpose for reading the lesson;

   b. estimate of the difficulty of the material and the reading time necessary; and

   c. need for variety and adjustment of speed within the material.

9. SQ3R and other study techniques were used. Each participant demonstrated one of the techniques in his/her content area group.

10. A structured reading assignment was designed in which the following components were present:

    a. prereading activities,

    b. reading activities, and

    c. postreading activities.

The four days of follow-up institute activity during the next academic year will provide opportunities for the participants to set up a reading skills center in their classroom. These reading skills centers will be evaluated by the institute staff. During this time

there will also be implementation, observation, and evaluation of vocabulary and comprehension teaching strategies developed by institute participants in each content area classroom. Finally, concepts learned during the summer will be reviewed, and plans for the continual development of teachers' skills for teaching reading in their content areas will be made.

Objectives

The objectives of this study were: (1) to determine whether intensive inservice education in content area reading instruction made a significant difference in teacher planning for content area reading strategies; (2) to identify the specific content areas in which the ideas of the institute made the greatest impact; (3) to study the particular reading strategies content area teachers planned to use in their instruction; and (4) to determine whether teachers who understood the need for improving students' reading ability included more of the content area reading strategies in their instructional planning than did teachers who did not understand the need.

Review of Literature

Despite the recent upsurge in interest regarding the teaching of reading in content areas, there has been little investigation into the effects of content area inservice instruction on the attitudes and performance of secondary teachers. Research literature suggests that content area teachers in secondary schools know little about reading skills and how to teach and use them. The literature, however, offers few suggestions regarding how content area teachers

can be helped to implement reading skills in their classrooms once they have acquired the knowledge of what these skills are and how they should be used. Little value is derived from familiarizing teachers with highly recommended reading strategies if that knowledge is not transferred into the classroom. For that matter, the familiarization is unlikely to occur if teachers do not perceive these strategies as being important. The present study attempts to answer some important questions concerning the attitudes and behaviors of content area teachers who have received inservice instruction in the teaching of reading.

The review of literature that follows will review the research in the areas of teacher inservice education, secondary teachers' attitudes toward the teaching of reading in content areas and teacher planning.

Teacher Inservice Education

There is a voluminous body of literature on inservice education of teachers. Unfortunately, most of this work fails to consider the effect of inservice training on subsequent teacher behavior. Most inservice training evaluates the success of the inservice through attitude questions and surveys immediately after the conclusion of an institute or workshop, and rarely is the teacher followed back to the classroom (Wiler and Kindsvatter, 1976). An exception to this situation is Timms (1974) who found that many teachers met the objectives of an inservice by passing a paper and pencil test, but did not transfer the learned skills to their classrooms. What ideas

they implemented were those they felt were feasible given limited facilities and equipment, overcrowdedness, and scheduling complications.

A survey of teacher inservice education in content area reading also reveals a failure to mention the changes in classroom teaching that were affected by the training program. Dietrich (1977), for example, assessed reading instruction at the junior high school level by observing English, mathematics, science, and social studies classrooms in order to note aspects of instruction that seemed to be helping students as well as those that needed improvement. Department meetings were then held where reading specialists discussed specific problems and visited classrooms to demonstrate, test, and observe. The report does not mention the effects this intervention had on the attitudes of the teachers toward content reading and on their classroom performance. Did an awareness of students' reading problems and strategies to alleviate these problems result in the content area teachers' implementation of these strategies?

Jensen (1976) conducted an inservice teacher training program in content area reading which included (1) a summer workshop, (2) a year-long training of one regular teacher from each of the four major content areas to provide assistance to respective departments through monthly inservice sessions, and (3) semester - or year - long implementation of instruction in reading in the content areas. As a result of this inservice plan, junior high school students improved in vocabulary and comprehension (as measured by standardized

reading tests), but no mention is made of what the teachers did to make this happen. The results reported by Jensen fail to indicate what instructional strategies teachers used to produce the positive change in reading ability. The present study will determine the effects of an intensive, two-week reading-in-the-content-area-institute on teacher planning. A subsequent study will investigate the effects of the institute or teacher performance in the classroom.

Teacher Attitudes Toward Teaching Reading

Since attitudes indicate what teachers are likely to do in a particular situation, it is important to assess the attitudes of secondary teachers to determine whether they are likely to integrate the teaching of reading with the teaching of their content. Dupis and Askou (1978), for example, studied the attitudes of content area teachers toward teaching reading. They found that the science/math group was one of two groups (the other being reading teachers) to be receptive to integrating the teaching of reading with the teaching of their content. The pretests of science/math teachers showed lower skill and attitude scores than English teachers. The post-tests of these science/math teachers showed the most positive gain in skill and attitude toward teaching reading.

Edwards (1979) reported conflicting results regarding secondary teachers' attitudes toward the teaching of reading when measured by different instruments including questionnaire-surveys, self-frequency checklists, Likert-type Scales, and summated rating scales. According to Vaughan (1980), Edwards failed to critically evaluate the con-

struct validity of the instruments being used. Each instrument was probably measuring something different, hence, the lack of agreement. Vaughan correctly points out that most researchers note only the face validity of an instrument and fail to assess its construct validity which is a much more difficult undertaking. This may be most difficult in a field where the constructs are not fully explicated, e.g., attitudes toward teaching reading in content area classrooms.

Some surveys have shown secondary teachers' apathy and lack of training to be the major obstacles in the establishment of content area reading programs (Edwards, 1979). However, researchers question the validity of information obtained by questionnaires which ask teachers to report their attitudes, because teachers have a tendency to overestimate or underestimate what they do in their classrooms. Mobury (1972), for example, suggests that survey results be interpreted with caution, and teachers' self-evaluation be compared with assessments obtained through such means as direct observation, personal interviews, and unobtrusive or nonreactive measures.

The present study used a 4-point Likert Scale to assess teacher attitudes toward content area reading. The scale was devised to assess teachers' attitudes toward 15 separate content areas reading strategies. Although validated instruments for assessing teachers' attitudes toward teaching exist (Estes, et.al., 1975; Vaughan, 1977), they do not measure teacher attitudes toward the use of specific teaching strategies. The content area teachers were asked to rate

the importance of the various reading strategies they learned in the institute in terms of whether or not they planned to use them in their classroom. This introspective analysis by content area teachers, coupled with the objective assessments obtained through their planning and subsequent teaching, should provide an accurate picture of secondary teachers' attitudes toward teaching reading.

Teacher Planning

Two kinds of decisions underlie teacher behavior in the classroom--planning decisions and interactive decisions. Planning decisions are those decisions which teachers make prior to the act of teaching. Interactive decisions are those decisions teachers make during the act of teaching. Planning involves selecting educational objectives, diagnosing learner characteristics, organizing the content to be taught, selecting student learning activities and materials, and choosing instructional strategies in order to achieve certain learner outcomes. Research on teacher planning has sought to determine how teachers plan, how they differ in their planning, and how teachers' planning reflects their subsequent behavior in the classroom.

While research on teacher planning is still scanty, recent findings suggest that there is a relationship between teacher planning and subsequent teacher behavior in the classroom. Zahorik (1975) found that content to be covered was the most important decision made by teachers in terms of the frequency with which it was reported in their plans. Selection of student learning activities and materials

were mentioned next in terms of frequency. Planning decisions about evaluation and diagnosis were made with the least frequency. Zahorik found that plans made by teachers correspond to their behavior in the classroom, e.g., teachers do not plan for diagnosis, and diagnosis is done infrequently in the classroom.

Peterson, et.al., (1978) found a significant relationship between teacher planning and classroom behavior. For example, teachers who placed considerable importance upon instructional objectives devoted considerable time to setting goals for their students in the classroom. Similarly, teachers who emphasized instructional strategies in their plans used a wider variety of strategies in their teaching, and talked more with students about the process of learning, thus maintaining the instructional processes initiated by the teacher.

Much of the research on teacher planning has used simulated planning activities to elicit the decision-making processes of teachers. Peterson, et.al., (1978), for example, asked teachers to "think aloud" after being given a short unit to plan and teach. Shavelson (1976) used vignettes of classroom situations to elicit teacher plans and decisions. Because these simulated activities reflect what teachers do in the classroom, the authors of this paper felt that a simulated planning task would reveal what reading strategies content area teachers plan to use in their instruction.

Methodology

Data Collection

The data for this study were collected using two distinct instruments designed to reveal which content area reading strategies teachers believe are useful and to discover which strategies they plan to employ in their teaching. The first instrument was a simulated teacher planning activity. The teachers in the institute were asked to plan a unit of instruction in one of four content areas (English, social studies, science, and mathematics) and to develop an introductory lesson to the unit. The teachers were provided with brief vignettes which described their students (e.g., various reading abilities) and the content of the unit (e.g., the causes of the American Revolution). Accompanying the vignettes were a series of questions to guide their thinking as they engaged in the planning; however, the teachers were free to plan in any manner that was comfortable. (A sample vignette is included in the appendix.) Teachers' written protocols were then analyzed by two expert judges to determine the number of content area reading strategies employed, the appropriateness of their use, and the degree to which teachers integrated the reading strategies into their teaching plans.

The simulated planning activity was administered immediately before and after the institute to measure, as unobtrusively as possible, the participants' growth in the value and use of content area reading strategies.

The second instrument was an attitude questionnaire designed to

measure the participants' perception of the content area teaching strategies presented in the institute. The 4-point Likert Scale assessed the participants' attitudes toward content area reading strategies after the institute. Included in the instrument were items that asked the participants to rate the value of fifteen teaching strategies in content area reading by indicating which strategies they would use in their future teaching. By comparing responses on the attitude questionnaire to the planning tasks, we were able to gain some understanding of what teachers claim is valuable versus what they actually include in their formal planning.

Data Analysis

The simulated planning activity and the attitude instrument were analyzed to determine which content area reading strategies were valued by teachers and which strategies they included in their planning. Each instrument yielded numerical scores that reflected the teachers' use of content area reading strategies and their perceived value. Specifically, the authors were interested in determining which content area reading strategies were valued by the teachers and which strategies they included in the actual planning.

The data analysis proceeded in the following manner. Each written protocol for the pre- and post-planning tasks was read, and a numerical tally was kept for each reading strategy that the writer included. Subsequently, the judges determined whether teachers used the reading strategy appropriately and whether the reading strategy was integrated into the content of the unit. A strategy was consi-

dered to be used appropriately if the teacher used it at the appropriate place in the planning of instructional units. For example, a legitimate content area reading strategy is assessing the readability level of textbooks, but this procedure becomes inappropriate if the teacher determines readability after the textbooks have been assigned. The information does not modify the choice of materials. A content area strategy was counted "integrated" if the teacher included either a reason for using the skill or a description of its use. For example, a teacher may assess students' reading comprehension through the use of the cloze procedure before instruction, but fail to indicate how this information would be used to modify instruction or select materials. The judges determined if each skill was used in an appropriate and integrated manner, and a tally was kept of their results. Any disputes about the rating and categorizing of a skill were resolved through a discussion and a rereading of the protocol.

The numerical tallies for the presence, appropriateness, and integration of content area skills were converted to percentages. Separate results were computed for each major content area: English, science, math, and other areas.

The Likert Scales for assessing teachers' attitudes toward teaching reading strategies in content area courses were also tallied. Results were reported for the total group, for each separate content area, and for each reading strategy. All of the data will be reported in percentages or mean scores on the Likert Scale since inferential statistics were inappropriate for such a research and evaluation project.

Results

The results of the project will be presented in three separate sections. First, we will describe the results of the pre- and post-planning tasks for the total group. Second, these results will be broken down into the individual content areas in order to provide a description of what content area reading strategies teachers in the four subject matter areas will include in their curriculum planning. Finally, we will present the results which describe content area teachers' attitudes toward the use of reading strategies in their classrooms. These results will also report how the teachers' attitudes toward the use of content area reading strategies correspond to the strategies they actually plan to employ in their teaching.

Teacher Planning for the Whole Group

When teachers plan instructional units or individual lessons, we expect them to consider the reading abilities of their students and attempt to aid students' understanding of the content through the development of reading skills. Table I presents the results of the pre- and post-planning tasks for the total group of teachers. An inspection of Table I reveals that there was a substantial increase in the number of content area reading strategies mentioned in the posttest planning protocols as compared to the pretest planning protocols. In the pretest planning tasks, reading strategies were included in only 10% of the protocols. The most frequently mentioned strategies were 1) assessing students' reading ability through the use of informal tests (30%); 2) grouping students for instruction (24%);

3) using prereading motivational activities (21%); and 4) preteaching difficult vocabulary (21%). In the posttest planning task, reading strategies were included in 52% of the protocols. This is an increase of 42%. The most frequently mentioned strategies were assessing the readability level of textbooks (88%) and assessing reading comprehension through the cloze procedure (88%). The next most frequently mentioned strategies were assessing students' reading ability through the use of informal tests (76%) and pre-teaching difficult vocabulary (73%).

On the average, the participants included many more content area reading skills in the posttest planning tasks than they did in the pretest planning tasks. Assessment strategies demonstrate the largest gain from the pretest planning task to the posttest planning task. The frequency with which participants would plan to assess student comprehension rose 88%, from 0% on the pretest planning task to 88% on the posttest planning task. Assessing readability rose 76%, from 12% on the pretest planning task to 88% on the posttest planning task. Assessing reading ability through informal tests rose 46%, from 30% on the pretest planning task to 76% on the posttest planning task. There were notable gains in preteaching vocabulary and the use of directed reading assignments. Preteaching vocabulary was included by participants in 52% more protocols on the posttest planning task than on the pretest planning task. Directed reading assignments were included in 49% more protocols on the posttest planning task than on the pretest.

Insert Table I About Here

At the end of the institute the frequency with which some strategies were included in the posttest planning tasks did not change measurably compared to the pretest planning task. The frequency of including prereading motivational activities rose 12%, from 21% on the pretest planning task to 33% on the posttest planning task. Assessing student interest rose 27%, from 3% on the pretest planning task to 30% on the posttest planning task. Designing reading guides rose 30%, from 3% on the pretest planning task to 33% on the posttest planning task.

While many content area reading strategies were mentioned in the protocols, few of these strategies were used appropriately or integrated into the content of the unit, as can be seen in Table I. Generally, only 4% of the strategies were used appropriately in the pretest planning tasks and 24% were used appropriately in posttest planning tasks. On the pretest planning task no strategy was used appropriately by more than 18% of the participants. On the posttest planning task the assessment of text readability and the teaching of study skills were strategies most frequently used appropriately (58% and 42%). The least appropriate use was made of several direct teaching strategies. For example, teaching contextual analysis and structural analysis and asking comprehension questions at all levels of cognition were mentioned in an appropriate manner by only 9% of the participants. Only 6% of the participants used reading guides appro-

priately. Several skills which were frequently included in the post-test protocols were used inappropriately. For example, use of the cloze procedure was mentioned by 88% of the participants, but was applied appropriately only 33% of the time. Similarly, grouping for instruction was mentioned by 70% of the participants but was done appropriately only 27% of the time.

The total group of participants was largely unsuccessful in integrating the strategies into the content of the unit. That is, the teachers did not specify how the content area reading strategy would modify their instruction or improve their students' ability to comprehend the written material. While they may have mentioned an appropriate use of the cloze procedure, for example, they failed to specify how this strategy would alter their selection of reading materials. This can be seen in Table I. In the pretest planning task only 3% of the participants integrated reading strategies with the content of the unit. On the posttest planning task, 19% of the participants integrated the strategies with the content of the unit. The strategies the participants found easiest to integrate were: 1) assessing the readability of material (48%); 2) pre-teaching vocabulary (33%); 3) assessing student reading ability through the use of informal tests (30%); and 4) assessing reading comprehension through the cloze procedure (30%). While many strategies were mentioned in the written protocols, often the responses resembled an extension list of everything learned in the institute, and the participants failed to indicate how the strategies would be used in an appropriate and integrated manner.

Teacher Planning for Individual Content Areas

The responses from each content area showed considerable individual variation. Generally, in all four content areas the same number of strategies were included by each participant, but their distribution varied. In all content areas the percentage of strategies included by participants was greater than the percentage of strategies used appropriately or integrated into the content of the unit. For each content area, results will be discussed only for the percentage of strategies included in the written protocols. In all cases the data for the appropriate use and integration of teaching strategies follow and reflect the results for the use of these strategies. For example, all participants are less successful in noting the appropriate use of a strategy than in just including it in their plans.

English. The data for the English teachers who participated in the institute are presented in Table II. On the pretest planning task, 11% of the participants included reading strategies; 7% were considered to be used appropriately; and 5% were integrated into the unit. On the posttest planning task, 53% of the participants included reading strategies; 23% were considered to be used appropriately and 19% were integrated into the unit.

Insert Table II About Here

On the posttest planning task, the results of English teachers showed some variation in the use of individual reading strategies. Like the total group of participants, a high percentage of English teachers included strategies for assessing the readability of text (77%) and assessing comprehension through the cloze procedure (77%). Unlike the total group, English teachers tended to include more general teaching strategies in their planning than did the total group. Preteaching vocabulary, for example, was mentioned by 92% of the participants, teaching contextual analysis by 77% and teaching structural analysis by 77%. The strategies mentioned least were assessing student interest (23%) and establishing reading skill centers (23%). Few English teachers (31%) included reading flexibility or study skills in their planning.

Science. The results for the science teachers are presented in Table III. The science teachers in the institute included the same percentage of content area reading strategies in the posttest planning task as did the total group (52%). On the pretest planning task 5% of the participants included reading strategies; 2% were considered to be used appropriately; and 2% were integrated into the content of the unit. On the posttest planning task, 52% of the participants included reading strategies; 35% were considered to be used appropriately; and 30% were integrated into the unit. The science teachers used the reading strategies more appropriately and with greater integration than did any of the other content area teachers.

Insert Table III About Here

On the posttest planning task, science teachers planned to assess readability (75%), student comprehension through cloze procedure (100%) and student reading ability through informal tests (75%). Like English teachers, but unlike the teachers in the other areas, most science teachers would preteach difficult vocabulary (75%) and would use directed reading assignments (100%). The science teachers also planned to establish reading skills centers (75%) and to teach study skills (75%). The science teachers were no more inclined to include in their plans the teaching of contextual analysis, structural analysis, or various levels of comprehension questions than any of the other groups. Generally, the science teachers included a wider range of content area reading strategies in their plans than did any other group.

Mathematics. The data for the mathematics teachers who participated in the workshop are presented in Table IV. On the pretest planning task, 11% of the participants included reading strategies; 2% were considered to be used appropriately; and 0% were integrated into the content of the unit. On the posttest planning task 51% of the participants included reading strategies; 23% were considered to be used appropriately, and 18% were integrated into the unit.

On the posttest planning task mathematics teachers were willing to assess readability (100%), students' reading comprehension through the cloze procedure (83%) and students' reading ability through

Insert Table IV About Here

informal tests (83%). Only the readability formulas were used appropriately by a majority of the mathematics teachers (67%). Like the science teachers and teachers in the other areas, the mathematics teachers failed to include in their plans the teaching of contextual analysis (0%) or structural analysis (17%). Mathematics teachers were willing to preteach vocabulary (83%), to establish reading skills centers (83%) and to group students for instruction (67%).

Other Areas. The pre- and posttest results of the teachers from other areas are presented in Table V. On the pretest planning task 9% of the participants included reading strategies; 5% were considered to be used appropriately; and 2% were integrated into the content of the unit. On the posttest planning task, 52% of the participants included reading strategies; 20% were considered to be used appropriately; and 13% were integrated into the unit.

Insert Table V About Here

Overall, the other subject matter teachers in the institute included the same percentage of content area reading strategies in the posttest planning task as did the total group (52%). Compared to the total group fewer of these reading strategies were used appropriately (20%) or integrated into the content of the unit (13%).

The written responses of teachers from other areas often included lists of reading strategies which were not related to or integrated with the content.

Like the total group, the teachers from other areas indicated that they would make use of the various assessment strategies. On the posttest planning task, 100% of the teachers would assess the readability of textbooks, assess student comprehension through the cloze procedure, and use informal tests to assess reading ability. Eighty percent of the teachers would also group students for instruction. The teachers in this group differed from the English teachers in that they would make little use of teaching strategies for improving comprehension. For example, only 30% of these teachers would use prereading motivational activities; 40% would preteach vocabulary; 30% would teach contextual and structural analysis; and only 20% would ask comprehension questions at all levels of cognition.

In summary, assessment strategies were the most frequently employed strategies, followed by grouping for instruction and the preteaching of vocabulary. The least frequently used skills were the teaching of structural and contextual analysis, the assessment of interests and the design of reading guides. Only the English teachers planned to use strategies for teaching contextual and structural analysis, and planned to ask questions at many levels of cognition. Science teachers were the only teachers to use directed reading assignments and to establish reading skills centers.

Teacher Attitudes Toward Content Area Reading Instruction

At the end of the institute the participants were asked to rate the utility of fifteen major content area reading strategies that had been presented. Participants assigned four points to a strategy if they definitely planned to use the strategy in their teaching; three points if they probably would use the strategy; two points if they might use the strategy in their teaching; and one point if they would not use the strategy in their teaching. Their responses were summed and an average utility score was computed for each strategy and for each content area (English, science, mathematics, and other areas). The results are presented in Table VI.

Insert Table VI About Here

Generally, the science teachers felt that the content area reading strategies had the greatest utility, as reflected in their mean score of 3.83. The next most favorable results were reported by the English teachers with a score of 3.56, followed by the mathematics teachers with a score of 3.16 and the other teachers with a score of 3.00. These subjective judgments of the participants parallel the results of the planning tasks. Science teachers tended to include more strategies in their plans and felt that the strategies had the greatest utility. Teachers from other areas included the fewest strategies and believed the strategies had the least

utility. The results for English and mathematics teachers fell between these two groups.

Utility scores were also computed for each individual content area reading strategy. Participants felt the most useful strategies were asking comprehension questions at all levels of cognition (3.79), using directed reading assignments (3.77), and using prereading motivational activities (3.69). These subjective assessments of utility do not correspond to the frequency with which the strategies were included in the planning tasks. For example, the participants gave the highest utility rating (3.79) to asking questions at all levels of cognition. This strategy was included by only 36% of the participants in their posttest planning tasks. The participants claimed that they would ask comprehension questions at all levels of thought, but they neglected to include this strategy in their planning. Similarly, the use of prereading motivational activities earned a utility score of 3.69 but was included by only 33% of the participants in their posttest planning tasks.

Conversely, several strategies earned a low estimate of utility but were included in the vast majority of the planning tasks. Assessing students' reading comprehension through the cloze procedure earned a score of 3.04 but was included in 88% of the participants' plans. Assessing the readability of textbooks earned a utility score of 3.16 but was also included in 88% of the planning tasks. Clearly, what participants in the workshop felt would be useful differed from what they included in their plans. Only a subsequent

observation of actual teaching behavior will indicate which of these two measures, planning tasks or subjective assessment of utility, will predict what content area reading strategies teachers actually use in their teaching.

Discussion

An intensive two week institute in content area reading instruction clearly had an impact upon teacher awareness of the possibilities of integrating reading strategies with content instruction. There was a substantial increase in the number of content area reading strategies mentioned in the posttest planning protocols as opposed to pretest protocols. In the posttest planning task, participants included with frequency such strategies as informal assessment, preteaching vocabulary, and use of directed reading assignments. However, while participants were familiar with the strategies to be used in content area instruction, few of these strategies were used appropriately or integrated with the content of the instructional unit. Participants did not, or could not, specify how the use of content area reading strategies would modify their instruction or improve their students' ability to comprehend written material. Awareness of reading strategies, then, did not mean an integration of those reading strategies.

The most frequently employed strategies were informal comprehension assessment strategies, grouping for instruction, and the preteaching of vocabulary. The least frequently used strategies were the assessment of student interests and the design of reading

guides. It is of interest to note that the most frequently used strategies can be viewed as those used apart from direct content instruction while those least frequently used reflect teacher concern for strategies that are either part of direct content instruction (reading guides) or more difficult to integrate with instruction (assessment of interest). To use a reading guide would force teachers to make instructional changes.

The diverse response of several content area teacher groups warrants speculation. Only English teachers mentioned with some frequency the use of such strategies as structural and contextual analysis and the use of questions at many levels of cognition. Use of these strategies is already part and parcel of the English curriculum; therefore, inclusion of such strategies by English teachers is an expectation.

Science teachers in this study, not English teachers, used more reading strategies most appropriately and integratively. Science teacher participants were the only content group to use directed reading assignments and to establish reading skills centers. Our study supports the Dupuis and Askov study (1978) in which they found that science and math teachers showed consistently significant changes in all of their assessment measures although their pretest scores were lower in skills and attitudes than were those of English teachers. The science content area was also the smallest unit (4) in the study as opposed to English (13), math (6), and other areas (8); therefore, it is important to consider the size

of the science content group when interpreting results.

Teacher attitude toward content area reading instruction versus teacher planning of content area instruction raises several seeming contradictions. For example, participants gave a high utility rating to asking questions at all levels of cognition; however, this strategy was included by only 36% of the participants in the posttest planning tasks. Conversely, the assessment of students' reading comprehension through the cloze procedure earned a low utility ranking but was included in the majority of planning tasks. There was a clear difference between what participants felt would be useful and what they included in their instructional plans. Only in the observation of participants' classroom behavior will the researcher be able to determine what content area reading teachers actually use in their teaching. At that time the researcher/educator can examine the two measures of (1) planning tasks and (2) teacher assessment of utility to predict the reading strategies that will be used in classrooms.

Limitations

1. The study was conducted in a very short, intensive time period (ten days). Time was not available for participant absorption and assimilation of content.

2. Content area groups (English, math, science, other areas) were not balanced numerically. The English (13) content group was disproportionately larger than the math (6), science (4), and teachers in other area (10) groups.

3. The study used consultants from outside the school district and used no in-house consultants. The literature suggests that the most effective inservice model for

change is one that uses an "in-house" consultant as opposed to one that brings in outside "experts" (Dupuis and Askov, 1978).

4. No assessment of teachers' knowledge of reading strategies was made prior to the institute; therefore, we have no objective data to show that the institute addressed the current needs of the teachers.

Implications

The results of this study must be replicated in other school districts with a larger, more numerically balanced population of English, math, science, and other area teachers.

Since the study was done in a two-week period of intense content area reading instruction, it may have been possible to teach awareness only. If participants do not plan to integrate reading strategies into their classroom instruction after a two-week period of instruction, then one must study both the time devoted to teacher instruction and the nature of the instructional content. Teachers may need, for example, more time to assimilate and integrate the content and may need to have the instructional time distributed over a calendar year. Reading strategies need to be reexamined in light of participant response to those strategies. It is possible that a strategy such as the directed reading activity is only appropriate for instruction and integration in certain content areas.

The results of this study also illustrate once again how difficult it is for reading educators to teach content area reading in a meaningful way. In a response to Durkin's 1979 comprehension study, Smith points out the difficulties that secondary teachers

have in interfacing their areas of reading. He suggests that secondary subject area teachers have "insufficient background to move comfortably from one domain to the other" (Smith, 1979). Studies, therefore, must be conducted over a longer period of time to determine whether old patterns of teaching can be changed if new patterns are continually reinforced.

Finally, teachers must be observed and teacher plans must be studied to determine their application of reading strategies to their classroom instruction. Does transfer of content area reading instruction occur from college classroom to secondary school classroom? What kind of transfer occurs? These are the questions that beg further research.

Conclusion

Secondary school teachers are content-bound. Resistance to change of instruction was demonstrated again in this study. For the most part, teachers are willing to integrate those reading strategies that do not change their existing mode of instruction. For example, assessment of students' comprehension does not interfere with instruction, but use of directed reading guides directly affects instruction.

Content area reading preservice and inservice education programs for secondary teachers must be developed and maintained in an effort to break long-standing instructional patterns. Continuing research must be conducted to determine what kind of training programs effect the most change in secondary teachers' instruction.

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TABLE I

Percentage of total participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
1. Assess the readability level of textbooks using Fry Formula and Textbook Evaluation Checklists.	12	6	3	88	58	48
2. Assess reading comprehension through the cloze procedure.	0	0	0	88	33	30
3. Assess student reading ability through the use of informal tests.	30	18	9	76	39	30
4. Assess interest by developing a student interest inventory.	3	0	0	30	12	9
5. Use prereading motivational activities.	21	15	12	33	24	24
6. Pre-teach difficult vocabulary.	21	9	9	73	33	33
7. Teach contextual analysis.	6	3	3	39	9	9
8. Teach structural analysis.	3	0	0	42	9	9

TABLE I (cont.)

Percentage of total participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
9. Ask questions at all levels of cognition.	0	0	0	36	9	9
10. Design reading guides	3	0	3	33	6	3
11. Use directed reading assignment.	6	3	3	55	15	12
12. Establish reading skill centers.	9	0	3	45	18	6
13. Group students for instruction.	24	6	3	70	27	24
14. Teach flexibility techniques.	3	0	0	33	18	9
15. Teach SQ3R and other study approaches.	3	0	0	45	42	27
Mean	10	4	3	52	24	19

TABLE II

Percentage of English participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
1. Assess the readability level of textbooks using Fry Formula and Textbook Evaluation Checklists.	15	0	15	77	62	54
2. Assess reading comprehension through the cloze procedure.	2	0	0	77	46	23
3. Assess student reading ability through the use of informal tests.	38	31	8	54	23	23
4. Assess interest by developing a student interest inventory.	0	0	0	23	8	8
5. Use prereading motivational activities.	23	23	23	38	38	38
6. Pre-teach difficult vocabulary.	23	15	15	92	54	54
7. Teach contextual analysis.	15	8	8	77	23	23
8. Teach structural analysis.	8	0	0	77	23	23

TABLE II (cont.)

Percentage of English participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
9. Ask questions at all levels of cognition.	0	0	0	46	8	8
10. Design reading guides.	8	8	0	38	8	0
11. Use directed reading assignments.	8	8	0	54	0	0
12. Establish reading skill centers.	0	0	0	23	0	0
13. Group students for instruction.	15	8	0	62	15	15
14. Teach flexibility techniques.	8	0	0	31	15	8
15. Teach SQ3R and other study approaches.	0	0	0	31	23	8
Mean	11	7	5	53	23	19

TABLE III

Percentage of science participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
1. Assess the readability level of textbocks using Fry Formula and Textbook Evaluation Checklists.	0	0	0	75	50	50
2. Assess reading comprehension through cloze procedure.	0	0	0	100	50	50
3. Assess student reading ability through the use of informal tests.	0	0	0	75	50	50
4. Assess interest by developing a student interest inventory.	0	0	0	25	25	25
5. Use prereading motivational activities.	0	0	0	25	25	25
6. Pre-teach difficult vocabulary.	25	25	25	75	50	50
7. Teach contextual analysis.	0	0	0	0	0	0
8. Teach structural analysis.	0	0	0	0	0	0

TABLE III (cont.)

Percentage of science participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
9. Ask questions at all levels of cognition.	0	0	0	25	0	0
10. Design reading guides.	0	0	0	6	0	0
11. Use directed reading assignments.	0	0	0	100	75	75
12. Establish reading skill centers.	25	0	0	75	50	0
13. Group students for instruction.	25	0	0	75	50	50
14. Teach flexibility techniques.	0	0	0	50	25	0
15. Teach SQ3R and other study approaches.	0	0	0	75	75	75
Mean	5	2	2	52	35	30

TABLE IV

Percentage of mathematics participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
1. Assess the readability level of textbooks using Fry Formula and Textbook Evaluation Checklists.	17	0	0	100	67	33
2. Assess reading comprehension through the cloze procedure.	0	0	0	83	17	17
3. Assess student reading ability through the use of informal tests.	33	17	0	83	33	17
4. Assess interest by developing a student interest inventory.	0	0	0	33	17	17
5. Use prereading motivational activities.	33	0	0	33	17	17
6. Pre-teach difficult vocabulary.	17	0	0	83	17	17
7. Teach contextual analysis.	0	0	0	0	0	0
8. Teach structural analysis.	0	0	0	17	0	0

TABLE IV (cont.)

Percentage of mathematics participants who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
9. Ask questions at all levels of cognition.	0	0	0	50	33	33
10. Design reading guides.	0	0	0	33	17	17
11. Use directed reading assignments.	0	0	0	33	17	17
12. Establish reading skill centers.	33	17	0	83	33	17
13. Group students for instruction.	33	0	0	67	33	33
14. Teach flexibility techniques.	0	0	0	33	33	17
15. Teach SQ3R and other study approaches.	0	0	0	33	17	17
Mean	11	2	0	51	23	18

TABLE V

Percentage of participants in other content areas who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
1. Assess the readability level of textbooks using Fry Formula and Textbook Evaluation Checklists.	10	10	0	100	50	50
2. Assess reading comprehension through the cloze procedure.	0	0	0	100	40	20
3. Assess student reading ability through the use of informal tests.	30	20	10	100	60	40
4. Assess interest by developing a student interest inventory.	10	0	0	40	10	0
5. Use prereading motivational activities.	20	20	10	30	10	10
6. Pre-teach difficult vocabulary.	20	0	0	40	10	10
7. Teach contextual analysis.	0	0	0	30	0	0
8. Teach structural analysis.	0	0	0	30	0	0

TABLE V (cont.)

Percentage of participants in other content areas who included reading strategies in their planning and demonstrated the appropriate use and integration of these strategies

	Pre-Test Used			Post-Test Used		
	Included	Appropriately	Integrated	Included	Appropriately	Integrated
9. Ask questions at all levels of cognition.	0	0	0	20	0	0
10. Design reading guides.	0	0	0	40	0	0
11. Use directed reading assignments.	10	10	0	50	10	0
12. Establish reading skill centers.	0	0	0	40	20	10
13. Group students for instruction.	30	10	10	80	30	20
14. Teach flexibility techniques.	0	0	0	30	20	0
15. Teach SQ3R and other study approaches.	10	0	0	60	40	40
Mean	9	5	2	52	20	13

TABLE VI

Participants' assessment of the usefulness of content area reading strategies on a 4 point scale (4 = highest utility, 1 = least utility)

	English	Math	Science	Other Areas	Total Group
1. Assess the readability level of textbooks using Fry Formula and Textbook Evaluation Checklists.	3.20	2.60	3.75	3.10	3.16
2. Assess reading comprehension through the cloze procedure.	3.40	2.60	3.75	2.40	3.04
3. Assess student reading ability through the use of informal tests.	3.80	2.40	4.00	3.14	3.33
4. Assess interest by developing a student interest inventory.	3.80	3.40	3.50	2.85	3.39
5. Use prereading motivational activities.	3.80	3.40	4.00	3.57	3.69
6. Pre-teach difficult vocabulary.	4.00	2.80	4.00	3.00	3.45
7. Teach contextual analysis.	3.70	2.80	3.75	3.70	3.24
8. Teach structural analysis.	3.40	2.80	3.75	2.40	3.09
9. Ask questions at all levels of cognition.	3.80	4.00	3.75	3.60	3.79
10. Design reading guides.	4.00	3.80	3.75	3.14	3.67
11. Use directed reading assignments.	3.90	3.60	4.00	3.60	3.77
12. Establish reading skill centers.	3.20	3.20	3.75	3.14	3.32
13. Group students for instruction.	3.50	2.80	4.00	3.30	3.40
14. Teach flexibility techniques.	2.80	2.80	4.00	2.70	3.08
15. Teach SQ3R and other study approaches.	3.20	3.20	3.75	2.40	3.14
Mean	3.56	3.16	3.83	3.00	3.38

The Research on U.S.S.R.

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For some time classroom teachers and reading specialists have given their students free time to quietly read self-selected materials for enjoyment. Recently this practice has become a formalized teaching strategy which has been given at least five different names, numerous seemingly arbitrary rules for its implementation, and certain cognitive and behavioral objectives.

Hunt (1971) was first to describe a formalized strategy for implementing quiet, free reading of self-selected materials. The strategy was labelled Uninterrupted Sustained Silent Reading, or U.S.S.R. Hunt described U.S.S.R. as the skill development component in an Individualized Reading Program (I.R.P.), although the only skills to be taught were to be quiet, read, and search out ideas in the print. Hunt defended this strategy by defining reading comprehension as "making a series of judgments about the worthwhileness of the ideas (presented in the print) - not remembering and repeating all that has been read." (Hunt, 1971, p. 30.)

Levine, who called her strategy Quantity Reading, has similar ideas to Hunt on reading skills and comprehension: "Quantity Reading proposes that the only skills of reading are recognition skills. Comprehension is not a matter of skills and general abilities. Comprehension of any subject matter, not of any print, can be esta-

blished through quantity reading in that area of knowledge." (Levine, 1979, p. 577)

Some authorities on strategies for implementing silent reading in the classroom have emphasized the use of such a strategy for practicing specific reading skills (Mork, 1972; Allington, 1975; and Oliver, 1970). Oliver specifically stated that "efficiency in the application of reading skills would seem to be developed from about 20% instruction and 80% practice." (Oliver, 1970, p. 69)

One change in U.S.S.R. was proposed by McCracken, who dropped the U. from the acronym. In all other respects his strategy is the same as Hunt. McCracken and others (specifically, Mork, 1972; Ganz and Theofield, 1974; and Allington, 1975) have described students' behaviors resulting from the implementation of U.S.S.R. (or, if you prefer, S.S.R., High Intensity Practice, Quantity Reading, Sustained Quiet Reading Time, or SQuiRT, etc.). Some of the articles included personal accounts by teachers and students about how much students enjoy the strategy and how peer pressure is exerted on disruptive students to remain quiet.

The major problem with all of the previously mentioned articles is that <u>not one</u> of them cited any research to validate the use of the strategy or to suggest that it does not work. Some of the studies prescribed different steps to follow and various lengths of time (25 to 60 minutes) for silent reading (McCracken, 1971; Petre, 1971; and Allington, 1975), but none presented experimental-based evidence to substantiate any of these. Oliver actually stated

that "successful global reading practice will automatically improve those subskills which are most appropriate to the reading process," (Oliver, 1970, p. 70), and Levine claimed that through quantity reading the student "adds many new words to his stock of meanings." (Levine, 1972, p. 578). However, neither did any research to support these strong claims. Petre mentioned hearsay evidence that one middle school found that in five months, 43% of its students grew one or more reading levels as measured by a cloze test (Petre, 1971). However, Petre provided no substantive data to verify the claim. His article contains no meaningful statistical research.

If reading teachers and school districts are planning to use U.S.S.R. in their schools, or have already done so, they will have to look beyond these articles to find statistical justification of this strategy. So far, only two published quantitatively based investigations and one unpublished dissertation are to be found in the literature. (See editors' note at end of this article.)

Review of the Literature

One quantitatively based article comparing reading achievement using Sustained Silent Reading to commercial practice materials was reported by Evans and Towner (1975). They verify the lack of research on S.S.R. by stating that "there has been no serious examination of the effectiveness of S.S.R. in bringing about the benefits claimed for it, and objective data derived from controlled research are nonexistent." (Evans and Towner, 1975, p. 155.) Their study used 48 students in two fourth grade classrooms in a Bellington,

Washington, school. Half of the students were randomly assigned to a S.S.R. practice group, and half to a supplementary materials practice group. The two groups were divided equally by sex. All students received one hour of reading instruction daily by the assigned teacher, using the content, strategies, and exercises of the Ginn Reading 360 program teacher's manual. After each daily instructional period, the experimental group got twenty minute practice sessions of S.S.R. following McCracken's (1971) guidelines, while the control group used commercially available materials for practice and reinforcement of reading skills. The groups were pretested on the reading subtest of the Metropolitan Achievement Test, Intermediate, Form F, and posttested on Form G ten weeks later. No significant difference was found between the two groups on the pretest. No significant treatment, classroom, or interaction effects were found on the posttest. Evans and Towner then concluded that, "S.S.R. as a form of practice is neither more nor less effective than a multi-material form of practice, when used with fourth graders for a limited period of time such as two or three months." (Evans and Towner, 1975, p. 156.) They subsequently mentioned that S.S.R. may be a good strategy for practicing reading, but that further investigation is needed.

There are several flaws in this study that tend to minimize any value it may appear to have. First of all, the independent and dependent variables are confounded by the fact that all students received the same skills oriented reading instruction before breaking up into treatment groups. Seeing that this instruction was three times as

long (60 minutes to 20) per day as the treatments, one could expect little difference between groups on standardized reading tests. The expectation of no significant difference between groups is further supported by the fact that the treatments were administered for only ten weeks. Also, it is likely that the standardized tests used were not sensitive enough to pick up any effect of the treatment. Another flaw in the study is the size of the population. Two groups of 24 students from one elementary school is an extremely small population for one to obtain generalizable results. No description of the students was mentioned by the authors. They claim to have used random assignment of students while dividing them equally by sex. Also, with only two small groups and two teachers, there might have been some pupil-teacher interaction, but this variable was neither controlled nor discussed.

The two most positive elements of this study are that the authors have sought to explore an area heretofore lacking investigation and their conclusion stems logically from the data. Their call for more research is well taken, as this study provides only a hint relative to the effects of using S.S.R. on reading achievement.

Wilmot (1975) designed her dissertation to determine if there were significant differences in reading performance and attitudes toward reading of elementary level students who were exposed to S.S.R. Five hundred and seventy-six pupils in grades two, four, and six from two school districts in Massachusetts were selected for the experiment, which lasted from November, 1972, through June, 1973.

Some students were in programs including a daily period of S.S.R. and some were not. Reading performance was pre- and posttested with the vocabulary and comprehension subtests of the Gates Primary B and Survey Reading Tests, while attitude toward reading was measured by the Wilmot Reading Attitude Inventory. The study found that students in the fourth and sixth grades in the S.S.R. groups had significantly better ($a = 0.05$) attitudes toward reading than students in the control groups in those grades. However, the control groups' performance on the comprehension test was significantly better ($a = .10$) over all the grades. There was no significant difference between the groups in performance on the vocabulary test. She also found no significant interaction of socio-economic or I.Q. levels on students' attitudes toward reading or reading performance. Within the experimental group, there was a significant negative correlation between attitude toward reading and the time spent monthly on S.S.R. She concludes by urging those who wish to include S.S.R. in a reading program to weight the increment in attitude against the decrement in comprehension. She also suggests that there may exist an optimum amount of time for using S.S.R. to improve students' attitudes toward reading while allowing for time to teach reading skills.

Although not enough information is presented in a dissertation abstract to make an accurate appraisal of the research, it appears that Wilmot's experiment is more organized and subsequently valuable than previous studies. She has a much greater population spread over three grade levels, and the time period between the pretests

and the posttests, eight months, is more reasonable. That the S.S.R. group showed significantly better attitudes but a significantly lower comprehension performance makes this a very important study.

One point to be investigated in greater detail is the Wilmot Reading Attitude Inventory, which most likely is not a statistically validated instrument. Also, her implication that S.S.R. causes a decrement in comprehension is questionable because none of the reported results mentioned a drop in comprehension by the experimental group from the pretest to the posttest performance. One must assume, too, that the groups' pretest scores were comparable or that differences were controlled.

The other quantitatively based research study on U.S.S.R. was by Mikulecky and Wolf (1977a). This study was designed to investigate junior high school students' attitudes toward reading before and after receiving treatments of either U.S.S.R., reading-related games, or self-selected skills-related materials and activities. These treatments were used in an attempt to improve the students' reading attitudes. One hundred and thirty-five students were pretested on the Mikulecky Behavioral Reading Attitude Measure (M.B.R.A.M.), randomly assigned to one of the three treatments, which were administered 20 minutes a week as part of a required ten week developmental reading class, and then post-tested with the same instrument at the end of the ten weeks. The results were that the M.B.R.A.M. gain scores for all treatment groups were negative, indicating a slight deterioration of positive reading attitudes. Students were also

given a survey item measuring self-reported liking for reading at the end of the class. The survey also indicated an overall slight decline in liking for reading. However, the skills group showed a very slight increase in liking for reading on this single item rating scale.

The Mikulecky and Wolf study has several flaws that neutralize its value as statistical research on U.S.S.R. and reading attitudes. Within the design of the experiment, there is no control group to measure the attitudes of students taking the required reading class without the benefit of treatments designed to improve attitudes toward reading. Perhaps the treatments prevented the students from acquiring even more negative attitudes toward reading, but this could not be statistically indicated without a control group.

One major concern in the procedure was the twenty minutes per week time allotment for the treatments. The researchers themselves pointed out that this probably was not enough time to effect any changes in reading attitudes, especially considering that for the overwhelming majority of the time in this required class the students were working on skills oriented assignments focusing in on word analysis and comprehension. (Does this, by the way, suggest that students may be receiving mixed messages about what reading is and how to get better at it? To "toss in" "free reading" in a skills-based program seems to have substantial implications.)

The authors encouraged further research on the effectiveness of U.S.S.R. because the data gave some indication that U.S.S.R. was

a "popular and promising" strategy for retarding the decay of positive reading attitudes. The data on which this is based was that the U.S.S.R. treatment group demonstrated the smallest loss in mean attitude score, though not statistically significant. The fact that U.S.S.R. showed the least loss of positive attitudes should not be used as justification that it can retard the decay of positive reading attitudes. Perhaps it does; then again, such seems to be a very tentative conclusion. To their credit, however, they did not stop here.

Mikulecky and Wolf (1977b) subsequently redid their research study on U.S.S.R., making numerous changes but finding similar results. This time only two treatments were used; one seventh grade treatment group received 100% skills instruction during a nine week required reading class while the other group received 80% skills instructions and 20% U.S.S.R. (Again, were students receiving "mixed messages"?) Subjects were pre- and posttested with two measures of reading achievement, the vocabulary and comprehension subtests of the Stanford Diagnostic Reading Test, and with two measures of attitude toward reading, the Estes Scale and the M.B.R.A.M. The results were that both groups experienced a slight, nonsignificant decline in vocabulary scores. There was a significant difference between treatment groups for comprehension, with the U.S.S.R. and skills group experiencing a significantly smaller decline in mean raw scores. There were no significant differences in attitude toward reading between groups on either measurement. Both groups

showed a decline in mean raw scores from pre- and posttests.

The similar results of the two studies are linked to their similar design problems. Once again, the time limitation was a factor influencing the results. It is doubtful that a standardized reading test is sensitive enough to measure any gains in reading comprehension or vocabulary over a period of nine weeks; this time period is too short for the differences in treatments to take effect. Further, as noted by the investigators, the fact that the class was required might have been the factor that most influenced the students' declining attitudes toward reading, not the treatments. This second Mikulecky and Wolf study, although slightly different from their first, clearly points out the need for a variety of investigations relative to U.S.S.R.

Summary

In conclusion, there is a need for meaningful statistically based research on the topic of U.S.S.R. at the elementary and secondary levels. All articles or reading programs proclaiming any benefit derived from U.S.S.R. as of yet have no research based evidence to support these claims. U.S.S.R. presumably does have value to a reading program in that it focuses students in on the act of reading as a total process, not as a series of skills to practice and test. Few reading instructors would argue with the idea of allotting students some time in their program for U.S.S.R.; however, the existing research gives them no justification for doing this nor does it give them any indication on how much time they

should allot for U.S.S.R. Therefore, a research study similar to the following is suggested to clear up the use of U.S.S.R.

First of all, it is suggested that the length of the study be at least one school year so that the effects of the treatments be maximized and the measurements of gains or losses in reading comprehension and attitudes toward reading be more accurate. (Both attitudes and comprehension gains are important in justifying the use of U.S.S.R., so these should be investigated.) Three treatment groups are suggested in order to carefully investigate possible optimal ratio between time spent on U.S.S.R. and time spent on reading instruction for one group, 50% to 50% for the second, and 20% U.S.S.R. and 80% instruction for the third. These three ratios should be sufficiently wide to create differences in attitudes and comprehension scores.

Finally, it is recommended that junior high school students be used for the study because this group will already have completed all of its basic reading instruction and will most likely be assigned to developmental reading classes.

(EDITORS' NOTE:

Subsequent to the preparation and acceptance of this paper, two articles on the effectiveness of U.S.S.R. appeared in the March, 1980 Journal of Reading. As Pritzke would have had no familiarity with them and as they extend Pritzke's review, we mention them here as an addendum.

Cline and Kretke (1980) offer the most substantive investigation of U.S.S.R. to date. They discovered that over a three year period junior high readers improved in their responses to affective questions about reading substantially more if they had been exposed to a U.S.S.R. program for three years than if they had not. Although they found no significant differences in reading achievement between the experimental school and the control school, they emphasized that the students "...consistently score about their grade levels and above the 'expected achievement levels'. The spring 1978 (posttest) results on the standardized tests showed reading in the ninth grade (the exit group after three years of the experimental study) to be about two years above grade level" (p. 505).

Although the authors imply that this student group is atypical, we have inferred what this might mean and offer our inferences as "food for thought." First, was there a ceiling effect? That is, were the experimental students unable to show the true gains because they already score highly on the standardized test? The authors don't say so, but that is a possibility. Cline and Kretke might have a better idea than we on this one. Second, were all students, given that they were all clearly good readers, doing a lot of free reading outside of school such that what extra time that was spent in school on free reading actually represented only a small portion of the reading done by these students, those in the control group as well as the experimental group. Good readers tend to read; was this study, then, substantially threatened by maturational factors?

Cline and Kretke recommend further research, especially with students of varied reading ability; Pritzke would certainly agree. While this investigation is commendable and extensive, we wonder if they couldn't have done a treatment by levels analysis to provide further clues about those students who were not reading well above grade level. Given that they used two schools for this study, surely the sample is large enough to break down the findings to examine students at different ability levels. Of course, this violates the conditions for post-hoc tests since no main effects were found, but even if that data could provide a clue into this immensely important issue some deviation from accepted procedures could be warranted. We are not recommending inappropriate use of analytical procedures, but we are suggesting that if the design had been set up to examine levels at the outset then a main effect would have been found across the levels. Such would have allowed post hoc analysis relative to the treatment effect. Perhaps the data is available but has not been analyzed. Interested persons might contact Dr. Cline at the University of Colorado, Boulder, Colorado.

The second study that we mentioned was done by Minton (1980) and is of less value in terms of shedding light on the effectiveness of U.S.S.R. She does, however, offer lots of ways to avoid problems in U.S.S.R. programs and research. This article, as well as the Cline and Kretke article, is included in Pritzke's references for convenience.)

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Good, Average, and Poor Secondary-Level Readers' Affective Responses to Negatively-Connotative and Positively-Connotative Substitutes for "Said": A Critical Reading Study

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Introduction

The term "critical reading" means different things to different people. To the teacher of Literature, it means (a) the ability to form sharp, clear mental images from words, (b) the capacity to respond affectively as well as cognitively to these images, and (c) at times even the ability to infer special "symbolic" overtones from the ways in which these images are created and dealt with. To the teacher of Social Studies, however, to read "critically" is to read skeptically, with conscious detachment maintained from the emotional overtones of the language used. While the Literature teacher admonishes pupils to "let the author carry you away on the wings of the words," the Social Studies teacher warns students to reject an author's attempt to woo them to a point of view with emotionally-laden words. In the first situation, then, suspended disbelief is recommended; in the second, suspended judgment.

On at least three points, however, the two approaches do agree: (a) that reading is an active process, not a passive one, with the reader's own individual response an integral part of the total process; (b) that fine shades of individual word-meaning are the key to the transmission and reception of fine shades of thought and opinion; and finally (c) that these fine shades of word-meaning are carried largely through the connotations of individual words, rather than through their denotations.

Statement of the Problem

The question is this: do individual readers in fact respond affectively to the connotative components of the meanings of certain special words; and if so, to what degree? And do especially good readers, presumably our most successful products of the teaching-learning process in reading, respond more to these components, or less? To investigate this problem, the following study was devised and carried out.

1. A survey of the literature on critical reading was conducted, and the research focus narrowed first of all (a) to the empirical investigation of one specific rhetorical device recognized by both of the above points of view -- "loaded," or "emotive," or "connotative" words -- and then (b) to one specific example of this: connotatively-differing semantic substitutes for the word "said."

2. Next, special reading materials were created wherein these words could be regularly alternated in life-like, realistic contextual settings. Also, a system for the assessment of individual and group

levels of affective response to the materials was devised.

3. These materials were then field-tested and administered to several groups of readers, after which their individual and collective affective responses to them were statistically analyzed and compared.

4. Finally, conclusions were drawn from the statistical results, inferences regarding possible further related research were made, and the implications of the study for classrcom practice were considered.

The Review of Related Research

Overall, the review of the literature was relatively unfruitful. Though many, many articles of exhortation noted the need for instruction in critical reading, and a small handful reported correlational studies of critical-thinking test-scores and various reading-test subscores, only a very few dealt with the empirical investigation of critical reading per se.

Even these, however, like the studies of Nardelli (1957) and Osborne (1939), dealt only with the recognition, by students before and after training, of propaganda devices, rather than any measuring of reader response to these devices.

Generally, then, what the review did for the investigators was (a) reassure them of the high interest in the problem among reading professionals, and (b) encourage them to continue with the study.

Procedures

Two preliminary procedural decisions were made: (1) that the stimulus-materials to be used would have to be created especially for the study, since all the *in situ* examples examined employed a variety or combination of persuasive devices, and (2) that non-parametric statistical procedures would have to be employed throughout, since the measurement-level of the data to be collected would clearly be *ordinal*, rather than *interval*.

Development of the Data-Gathering Instrument

For stimulus-materials, ten simulated newspaper interviews were written. Relatively bland, ordinary characters were chosen, to discourage readers from responding to general personalities or general issues. Each total article ran approximately 150 to 200 words in length, or one-half to three quarters of a type-written page.

Then, in order to test the treatment effects, two versions of each interview were created. At five points, slots either directly preceding or directly following a quotation, either a *negatively connotative* or a *neutral and/or positively connotative* substitute for "said" was inserted. Examples of such pairs would be "commented" or "sneered," "chuckled" or "gloated," and "noted" or "bragged." Copies of four sample interview articles, along with the actual said-substitutes used, are included as Appendix Item A. All ten articles are available by writing to Dr. P. L. Anders, Department of Reading, College of Education, University of Arizona, Tucson, Arizona, 85721.

Following each interview were five five-step semantic-differential scales, with the polar adjectives WARM-COLD, FRIENDLY-UNFRIENDLY, LIKEABLE-UNLIKEABLE, MODEST-CONCEITED, and KIND-UNKIND posed at their opposite ends.

The reader's task, then, was (a) to read the article, (b) to form a mental image of the person being interviewed, and (c) to mark each scale in terms of where he felt the interviewee would fall on the continuum it represented.

To control for order-effects, twenty forms of the instrument were created, each containing five positive-version interviews and five negative-version interviews, with the orders of presentation rolled so that each version of each interview appeared equally often as first, second, third, and so on. Also, as the total booklets were compiled and bound, each of the five scales moved ahead one position on the page from booklet to booklet, and the positive and negative adjectives were alternated back and forth from one end of the scale to the other.

Field-Testing of the Data-Gathering Instrument

As a field-test of the instrument, 40 students in a graduate-level Reading Methods course were asked to take the test under the same conditions to be followed later, but without the order-effects controls. Their patterns of response were clearly as predicted, and so the instrument was deemed ready for use.

Choosing the Samples

Chosen as the samples for the actual study were four randomly-selected eighth-grade classes in a local junior-high and four randomly-selected eleventh-grade classes in a local senior-high. No attempts were made to stratify the groups in any way, since good, average, and poor readers were to be compared as part of the study. All eight classes were tested on the same day.

Statistical Treatment of the Data

Each sample group was analyzed separately, first as a total group and then good, average, and poor readers separately. Each analysis had three steps.

At the individual level, each subject's level of response to the five positive-version items was compared to his/her level of response to the five negative-version items, and then the degree to which the subject had responded "as predicted" was determined. Then, at the item-by-item level, the average level of response made to each positive version was compared to the average level of response made to its negative counterpart. The details of scoring are reported below.

Results

Results are reported, for both grade-levels, first at the subject-by-subject level, then at the item-by-item level, and finally in terms of the "predicted" directions of response.

Subject-by-Subject Comparisons

As an initial step, raw scores for each set of responses were computed in terms of a five-point scale, with the most positive point possible on each scale receiving 5 points and the least positive one receiving one point. Thus, each raw-score total for an item could range from a minimum of 5 (1 point each on each of the five scales) to a maximum of 25 (5 points each on each of the five scales). In other words, these scores all represented degree of positive direction of response.

The Eighth-Grade Sample. For each subject, two scores were computed; a "positive-versions score" (the subject's summed responses to the five positive-version items) and a "negative-versions score" (the subject's summed responses to the five negative-version items). These sets of paired scores were then compared by use of the Wilcoxen Matched-Pairs Signed-Ranks Test (the non-parametric equivalent of the parametric t-test between correlated samples). Highly significant differences ($p < .001$), with the positive-versions scores superior, were found for the "good" (2 or more years above grade-level, according to reported grade equivalency scores on the Iowa Test of Basic Skills) readers and the "average" (less than 2 years above or below grade-level, according to reported grade equivalency scores on the Iowa Test of Basic Skills) readers, but not for the "poor" (2 or more years below grade-level, according to reported grade equivalency scores on the Iowa Test of Basic Skills) readers. Table 1 reports these results.

Insert Table I About Here

The Eleventh-Grade Sample. In this group, highly significant differences (all $p < .0035$ or better) were found for all three sub-groups as well as for the total group, with the positive-versions scores superior throughout. Table II reports these results.

Insert Table II About Here

Item-by-Item Comparisons

For this step, two scores were computed for each interview article, a Mean Subject Response to the Positive Version and a Mean Subject Response to the Negative Version, and these two sets of paired scores were then compared via the Wilcoxen Text.

The Eighth-Grade Sample. In this group, highly significant differences ($p < .001$ or better) were found between the sets of scores for the total group, for the good-reader group, and for the average-reader group, but not for the poor-reader group, with the positive versions superior throughout. Table III reports these results.

Insert Table III About Here

The Eleventh-Grade Sample. In this group, highly significant differences were found for all three sub-groups, as well as for the total group. In all four comparisons, in fact, there were only three individual cases where a Mean Subject Response to the Positive Version

failed to exceed that of its Negative Version counterpart. Table IV reports these results.

Insert Table IV About Here

Predicted-Direction Comparisons

For this step, a rescoring was done. The positive-version responses were scored as before (from 5 points for a most positive response possible down to one point for a least positive possible), and the negative-version responses were scored in a reverse order (5 points for the least positive response possible down to one point for the most positive possible). When these two scorings were summed, then, the result was a measure of the degree to which each subject had responded as predicted; that is, positively to the positive versions plus negatively to the negative versions. This new score, then, when divided by 250 (the highest score possible, 25 points each on all ten items) became an index designated as the Percentage of Total Potential Predicted Direction of Response. This step, then, allowed for a final set of comparisons to be made: between the three levels of readers (the good, the average, and the poor) in terms of general sensitivity to the hypothesized treatment effects.

The Eighth-Grade Sample. First of all, to see if overall differences were present between and among the PTPPDR scores of the three levels of readers, a Kruskal-Wallis H (the non-parametric equivalent of the parametric F-test for independent samples) was computed.

The value obtained was clearly significant ($p < .02$), so analysis proceeded on to group-against-group comparisons with the Mann-Whitney U Test (the non-parametric equivalent of the parametric t-test between independent samples).

Statistically significant differences were found between good and poor readers ($p < .01$), but not between good and average readers ($p < .1056$). Further, between average and poor readers nonsignificant differences were found. These results are reported in Table V.

Insert Table V About Here

The Eleventh-Grade Sample. Again, a preliminary H test was computed and no statistically significant differences were found.

Conclusions and Implications

At the beginning of the study, the following two general working hypotheses were posed:

(a) that the versions of the interviews containing the positively-connotative substitutes for "said" would consistently elicit significantly higher levels of positive affective response than would the versions containing the negatively-connotative substitutes; and

(b) that good readers would probably respond more markedly in respect to the treatment effects than would average readers, but with average readers still responding more markedly than the poor readers.

The first hypothesis was clearly supported. At both grade-levels, both subject-by-subject and item-by-item comparisons clearly showed

the positive versions of the interviews to be consistently eliciting higher levels of affective response.

As for the second hypothesis, it was at least partially supported. Good readers at the eighth grade level were consistently more sensitive to the treatment effects than were poor readers. At the eleventh grade, however, there were no statistically significant differences between and among groups.

Discussion of the Conclusion

In introducing the problem to be investigated, note has been made of the fact that in some settings (like Literature class) reading instruction relative to critical reading is often clearly antithetical to that found in some other settings (like Social Studies class). And, since this first type of instruction almost always gets a larger portion of the students' time than does the other, it turns out to be the one that "sticks." Thus, we have a dilemma: as we encourage students to become more sensitive consumers of imaginative fiction and poetry, we're at the same time "setting them up" to being pushovers for propaganda.

The Implications for Instructional Practice

First, more time should be spent making students aware of the need to adjust their reading-response styles to the purposes of the author's materials with which they're dealing.

An interesting side-light of the field-test (with the 40 graduate students) was that only one of the group (after the test was over and the experiment was being discussed with them) reported having realized

what was making her respond differently to the different interviewees. Most simply said, "All I knew was that I liked some of them, but didn't like others." In other words, a mere five words were making them unconsciously respond differently, even though they were all relatively sophisticated, mature readers.

Second, teachers should encourage students to read newspaper and news magazine articles with a "critical eye." Once a reader is attuned to these propagandistic ploys it is not difficult to become sensitive to the persuasive strategies used by a writer. Once sensitized, a reader is likely to have a more honest dialogue with the writer and is likely to construct a more meaningful understanding of the printed material.

Third, students should be encouraged to write their own newslike articles employing various connotative words for the predictive effect of those words. These articles should be analyzed by class members and other words should be experimented with.

These suggestions provide a vehicle for the social studies teacher to "play with the language" in a way that is meaningful and constructive.

The Implications for Further Research

"Connotative" or "loaded" words, the rhetorical device investigated in this study, is, of course, only one of several propaganda devices that theoreticians of reading and social psychologists have regularly discussed for many years. The next step would be to investigate these other devices (e.g., borrowed prestige, borrowed dislike, band-wagon,

plain-folks, etc.) empirically. This study indicates that this could be done relatively easily, first, one at a time, and then perhaps in combinations.

References

1. Nardelli, Robert R. "Some Aspects of Creative Reading," Journal of Educational Research, L, March, 1957, pp. 495-508.
2. Osborne, Wayland W. "An Experiment in Teaching Resistance to Propaganda," Journal of Experimental Education, VIII, 1939, pp. 1-17.

Table I

INDIVIDUAL EIGHTH-GRADE SUBJECTS' SUMMED LEVELS OF POSITIVE RESPONSE[1] TO THEIR FIVE POSITIVE AND FIVE NEGATIVE ARTICLE-VERSIONS

Good Readers[2] N = 31		Average Readers[2] N = 54				Poor Readers[2] N = 11	
Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions
72	105	78	64	98	65	81	105
97	71	90	78	102	96	110	118
75	102	83	67	76	65	86	109
90	54	105	92	72	74	81	48
79	76	123	82	93	70	80	88
115	80	95	103	80	82	86	59
68	85	102	62	95	88	94	84
102	65	101	89	91	73	84	74
83	85	125	115	78	70	77	84
104	63	83	89	100	96	65	93
56	47	80	52	111	84	104	96
106	64	69	90	71	75		
79	60	113	41	73	58		
105	85	93	101	87	88		
74	69	74	77	113	64		
99	75	81	105	85	90		
101	53	109	81	98	111		
90	88	58	106	79	78		
109	52	67	93	93	98		
88	58	72	93	117	71		
114	66	64	72	91	101		
118	71	97	103	94	69		
106	47	87	73	91	85		
89	96	77	89	103	91		
117	84	57	63	110	71		
97	102	88	86	109	48		
85	105	72	82	107	79		
83	45						
102	110						
105	64						
61	69						

Positive Versions over Negative Versions
$z = 4.15$ $p < .00003$*

Positive Versions over Negative Versions
$z = 4.75$ $p < .00003$*

Positive Versions over Negative Versions
$z = .03$ N.S.D.

* one-tailed tests

[1] Highest possible level of positive response would be 125, and lowest possible level would be 25.

[2] Good readers were defined as two years or more above grade-placement, and Poor readers as two years or more below grade-placement.

Table II

INDIVIDUAL ELEVENTH-GRADE SUBJECTS'

SUMMED LEVELS OF POSITIVE RESPONSE[1] TO THEIR

FIVE POSITIVE AND FIVE NEGATIVE ARTICLE-VERSIONS

Good Readers[2] N = 27		Average Readers[2] N = 21		Poor Readers[2] N = 27	
Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions
87	59	98	67	73	74
74	64	97	42	116	72
101	58	100	75	92	61
64	75	72	94	77	79
105	56	69	69	56	78
71	66	84	91	92	52
115	66	117	85	74	51
122	92	65	86	88	97
83	78	88	71	87	73
74	56	96	61	87	75
89	80	85	74	73	73
93	68	96	71	85	99
90	70	72	64	86	100
57	46	83	71	89	80
67	68	99	59	83	66
75	63	92	75	82	60
98	80	81	70	75	86
96	76	84	67	109	68
94	65	79	94	70	68
103	54	89	68	86	70
95	103	105	83	80	54
112	64			100	98
69	66			89	67
64	76	Positive Versions over Negative Versions		72	81
99	80			95	63
118	86	z = 2.77 p .0028*		83	76
95	56			95	73
Positive Versions over Negative Versions z - 4.01 p .00003*				Positive Versions over Negative Versions z = 2.70 p .0035*	

* one-tailed tests

[1]Highest possible level of positive response would be 125, and lowest possible level would be 25.

[2]Good Readers were defined as two years or more above grade-placement, and Poor readers as two years or more below grade-placement.

Table III

MEAN SUBJECT RESPONSES* TO POSITIVE AND NEGATIVE VERSIONS:

GOOD, AVERAGE, POOR EIGHTH-GRADE READERS AND ALL THREE EIGHTH-GRADE GROUPS COMBINED

Articles	Good Readers N = 31		Average Readers N = 54		Poor Readers N = 11		All Three Groups Combined N = 96	
	Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions
Chessmaster	20.6	17.3	19.7	20.4	14.1	17.5	19.2	18.5
Quiltmaker	19.9	16.3	20.3	18.4	18.3	19.4	20.0	17.8
Guitarist	15.6	13.8	18.7	16.6	18.3	14.0	17.6	15.5
Teacher	18.5	14.4	18.2	16.1	15.8	18.7	18.1	15.9
French Student	12.9	9.7	14.3	11.1	20.7	15.3	14.7	11.0
Playwright	22.4	16.3	18.3	16.0	18.0	20.4	19.6	16.7
Film Director	14.3	10.6	15.2	12.4	15.4	13.0	15.0	11.9
Lady Fisherman	23.4	18.1	20.3	19.2	19.8	18.9	21.2	18.8
Woman Doctor	18.8	15.0	18.5	17.9	17.1	15.3	18.4	16.7
Quarterback	22.4	19.8	20.7	19.8	18.5	19.3	21.0	19.7

*Most positive response possible would be 25.0, and least positive response possible would be 5.0.

Table IV

MEAN SUBJECT RESPONSES* TO POSITIVE AND NEGATIVE VERSIONS:

GOOD, AVERAGE, POOR ELEVENTH-GRADE READERS AND ALL THREE ELEVENTH-GRADE GROUPS COMBINED

Articles	Good Readers N = 27		Average Readers N = 21		Poor Readers N = 27		All Three Groups Combined N = 75	
	Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions	Positive Versions	Negative Versions
Chessmaster	19.5	17.7	19.3	16.8	20.2	17.5	19.95	17.36
Quiltmaker	18.6	14.8	19.2	15.4	18.5	17.8	18.75	16.03
Guitarist	15.7	14.5	14.4	12.6	17.6	13.5	16.03	13.55
Teacher	19.5	11.6	19.5	13.3	17.6	12.9	18.80	12.51
French Student	13.2	11.4	12.1	12.2	13.6	11.2	13.08	11.55
Playwright	20.4	13.3	19.0	14.9	17.3	15.1	18.86	14.38
Film Director	11.3	10.8	12.6	11.7	13.0	8.5	12.25	10.27
Lady Fisherman	22.8	16.2	19.9	15.6	16.4	18.6	20.03	16.43
Woman Doctor	19.1	15.5	20.1	15.9	18.8	12.6	18.76	14.91
Quarterback	20.9	12.9	19.3	17.8	15.8	17.4	17.61	15.30

*Most positive response possible would be 25.0, and least positive response possible would be 5.0.

Table V

INDIVIDUAL EIGHTH-GRADERS' PTPPDR SCORES:

GOOD-, AVERAGE-, AND POOR-READER GROUPS

Good Readers N = 31	Average Readers N = 54		Poor Readers N = 11
.676	.656	.972	.504
.884	.648	.664	.528
.792	.664	.644	.508
.504	.652	.592	.732
.612	.764	.692	.568
.740	.568	.592	.708
.532	.760	.628	.640
.748	.648	.672	.840
.592	.640	.600	.572
.444	.596	.616	.488
.412	.712	.708	.632
.768	.516	.584	
.636	.888	.660	
.680	.568	.596	
.620	.580	.796	
.696	.504	.580	
.792	.712	.548	
.480	.408	.604	
.828	.656	.580	
.720	.676	.784	
.792	.568	.560	
.788	.576	.700	
.548	.656	.624	
.572	.552	.648	
.732	.576	.756	
.580	.608	.844	
.520	.560	.712	
.752			
.568	Kruskal-Wallis H = 8.1616		
.764			
.568	$p < .02$*		

Good Readers over Average Readers	z = 1.105	$p < .1346$**
Good Readers over Poor Readers	z = 2.279	$p < .01$**
Average Readers over Poor Readers	z = .058	$p < .281$**

* two-tailed test
** one-tailed tests

APPENDIX ITEM A: Four Sample Simulated Interviews

Article #1: YOUNG CHESS-MASTER DISCUSSES PERSONAL PLANS

Before he emerged from the state chess tournament as grand champion, Steven Wagner was a virtual unknown in chess-playing circles. Today, however, he's acknowledged to be a master strategist of the game, and all at the tender age of 19.

Brushing away an unruly shock of hair, the Carnegie engineering student disclosed that he first became interested in the game at the age of 10 when he was bed-ridden with scarlet fever. "That's when I started reading--reading every book on chess I could find," he ("noted" in the positive version, "announced" in the negative version).

Wagner now devotes as much as 4 to 5 hours a day to puzzling over strategy. "But recently I've allowed myself a side-interest--I've become a collector of chess sets," he ("revealed" in the positive version, "proclaimed" in the negative version). He has even begun to carve one himself. "When completed, it will represent at least six months' work," he ("estimated" in the positive version, "boasted" in the negative version).

At the moment, Wagner regards chess as a hobby only. Asked whether he will continue to participate in competitive events, "Maybe," he ("mused" in the positive version, "hedged" in the negative version). "I don't know." "But there is one thing I do know," he ("answered" in the positive version, "retorted" in the negative version), "I'll never completely give up the game!"

Article #2: VETERAN QUILT-MAKER DISCUSSES FAMILY CRAFT

Today quiltmaking may not enjoy its former popularity, but "It is by no means a dying art," ("notes" in the positive version, "proclaims" in the negative version) a local craftswoman.

She is Mrs. Harriet Reed Butler, one of the most skilled quilt-makers in this area. Mrs. Butler ("estimates" in the positive version, "boasts" in the negative version), "I've worked on over one hundred quilts in my lifetime."

A large collection of "crazy" quilts is on display in her home. The 77-year-old woman ("observed" in the positive version, "hooted" in the negative version), "We Reeds were making crazy quilts when we came, and we're still making them." When yard goods and money were scarce, scraps of material from other sewing projects and old clothing were combined to form the sturdy, colorful quilts.

Mrs. Butler treasures a number of patterns which have been handed down in her family. Traditionally, designs were traded at quilting bees. "At these bees, everybody wanted to use the Reed patterns," she ("recalled" in the positive version, "crowed" in the negative version).

In those days, the fanciest quilts were the bridal quilts fashioned by young girls for their dowries. "That may be old-fashioned," Mrs. Butler ("admitted" in the positive version, "hurrumphed" in the negative version), "but it's still a custom in my family." She sees to it that the craft is kept very much alive.

Article #3: VISITING GUITARIST RELATES PERSONAL CONCERNS

William Johns--young superstar of the classical guitar--considers himself to be a Euro-American or world citizen. "Music, rather than artificial national boundaries, determines my citizenry," he ("explained" in the positive version, "declared" in the negative version).

The 27-year-old Johns left high school in Davenport, Iowa at the age of 16 to study with master guitarists in Britain and Europe. "I don't have much formal education," he ("admitted" in the positive version, "boasted" in the negative version). "Had I stayed in school, I probably wouldn't have learned anything anyway," he ("sighed" in the positive version, "snickered" in the negative version). "I was totally absorbed in music."

Describing his love of the classical guitar, Johns commented, "It is a very delicate, expressive, soft-spoken instrument." "In fact," he ("ventured" in the positive version, "charged" in the negative version), "I don't believe any really sensitive person could be deaf to its charms."

Johns appeared at Carnegie Hall on Friday and Saturday. He leaves the United States tomorrow to begin a two-month tour of Australia and New Zealand. "I'm sure my show will be well received," he ("predicted" in the positive version, "bragged" in the negative version), "because my records have always enjoyed good sales overseas."

Article #4: RETIRING TEACHER REMINISCES ABOUT PAST CAREER

What's it like to have had a career spanning almost a half-century? For retired teacher, Miss Ada Lister, it's been a question of adjusting to tremendous changes. "Not the least of which," she ("noted" in the positive version, "moaned" in the negative version), "is that students have gained more and more control over their education during recent years."

The former Central High English teacher also commented upon her colleagues' increasing militancy. "When I started out," she ("recalled" in the positive version, "sputtered" in the negative version), "teachers kept their place."

"Another difference," she ("observed" in the positive version, "charged" in the negative version), "is how teachers dress. Nowadays, anything goes!"

A final topic of concern to Miss Lister is the contemporary curriculum. "Here, too," she ("chuckled" in the positive version, "complained" in the negative version), "nowadays anything goes!"

The last member of the original Central faculty to retire, she ("joked" in the positive version, "snorted" in the negative version), "I suppose it's high time an old schoolmarm like me got turned out to pasture." With 47 1/2 years of answering school bells, Miss Lister holds the record for having had the longest career in the local school system.